Described above are apparatus and methods that achieve the goals of the invention. It will be appreciated that the embodiments described herein are examples and that other embodiment incorporating changes thereto also fall within the scope of invention. Thus, by way of example, it will be appreciated that the invention can be implemented using a virtual machine environment other than JVM and using bytecode other than Java bytecode. By way of further example, it will be appreciated that the apparatus and methods taught herein can be applied to a range of control application, in addition to process control.

In view of the foregoing, what I claim is

1. A field device for a control system, the improvement wherein

the field device provides a virtual machine environment and executes byte code therein,

the byte code configuring the field device to execute a control algorithm.

2. The field device of claim 1, the further improvement wherein the byte code configures the field device to execute a control function block.

3. The field device of claim 1, the further improvement wher ein the byte code configures the field device as a controller.

4. The field device of claim 3, the further improvement wherein the byte code configures the field device to perform proportional integral derivative control.

5. A field device for a control system, the improvement comprising

a virtual machine environment within the field device,

byte code executing within the field device that configures it to perform signal conditioning.

6. The field device of any of claims 1 - 5, the further improvemen t wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

7. The field device of any of claims 1 - 5, the further improvement wherein the byte code comprises JAVA byte code.

8. A field device for process control, the improvement wherein the field device comprises a web server.

9. The field device of claim 8, the further improvement wherein the web server is embedded.

10. The field device of claim 8, the further improvement wherein the we b server serves web pages that facilitate any of configuration, monitoring and maintenance of at least the field device.

11. The field device of claim 10, the further improvement comprising a configuration editor in communication with the web server, the configuration editor controlling at least the field devices' configuration.

12. The field device of claim 11, the further improvement wherein the configuration editor is selectively disabled or enabled, depending upon the type of network to which the field device is coupled.

13. A field device for a control system, the improvement wherein the field device provides a web server and a virtual machine environment.

14. The field device of claim 13, the further improvement wherein the virtual machine environment executes byte code that configures the field device to any of (i) execute a control algorithm and (ii) perform signal conditioning.

15. The field device of claim 14, the further improvement wherein the byte code configures the field device as a controller.

16. The field device of claim 15, the further improvement wherein the byte code configures the field device to perform proportional integral derivative control.

17. The field device of claim 14, the further improvement wherein the web server is embedded.

18. The field device of claim 14, the further improvement wherein the web server facilitates any of configuration, monitoring and maintenance of at least the field device.

19. The field device of claim 18, the further improvement comprising a conf iguration editor that is in communication with the web server, the configuration editor controlling at least the field devices' configuration.

20. The field device of claim 19, the further improvement wherein the configuration editor is selectively disabled or enabled, depending upon the type of network to which the field device is coupled.

21. The field device of any of claims 13 - 20, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

22. The field device of any of claims 13 - 20, the further improvement wherein the byte code comprises JAVA byte code.

23. A field device for a control system, the improvement wherein the field device comprises an interface to an IP network.

24. The field device of claim 23, the further improvement wherein the interface receives operational power for the field device from the IP network.

25. The field device of claim 23, the further improvement wherein the interface comprises an interface to an Ethernet network.

26. The field device of claim 25, the further improvement wherein the interface receives operational power for the field device from the Ethernet network.

27. The field device of claim 23, the further improvement comp rising a processor that is in communication with the interface.

28. The field device of claim 27, the further improvement wherein the processor is a low-power processor.

29. The field device of claim 27, the further improvement wherein the processor prov ides a virtual machine environment and executes a web server.

30. The field device of claim 29, the further improvement wherein the processor executes an operating system.

31. The field device of claim 30, the further improvement wherein the operating sy stem is a real-time operating system.

32. The field device of claim 30, the further improvement wherein the field device comprises at least one of a random access memory, a read-only memory, FlashRAM, a FlashRAM, and a sensor interface.

33. The field device of any of claims 23 - 32, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

34. A field device for process control, the improvement comprising

a processor, and

an interface to an IP network, the interface being in communication with the processor.

35. The field device of claim 34, the further improvement wherein interface receives operational power for the field device from the IP network.

36. The field device of claim 34, the further improvement wherein the interface comprises an interface to an Ethernet network.

37. The field device of claim 36, the further improvement wherein the interface receives operational power from the Ethernet network.

38. The field device of claim 34, the further improvement wherein the processor executes a web server.

39. The field device of claim 34, the further improvement wherein the processor executes any of (i) a control algorithm and (ii) a signal conditioning algorithm.

40. The field device of claim 39, the further improvement wherein the processor performs proportional integral derivative control.

41. The field device of claim 34, the further improvement wherein the processor executes a web server that facilitates any of configuration, monitoring and maintenance of at least the field device.

42. The field device of claim 41, the further improvement comprising a configuration editor in communication with the web server.

43. The field device of claim 42, the further improvement wherein the configuration editor is selectively disabled or enabled, depending upon the type of network to which the field device is coupled.

44. The field device of any of claims 34 - 43, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

45. The field device of claim 44, the further improvement wherein the field device is adapted for use in a process control system.

46. A field device for a control system, the improvement wherein the field device includes an interface to an IP network and wherein the field device issues to the IP network, via the interface, a request for assignment of an IP address.

47. The field device of claim 46, the further improvement wherein the field device receives a device identification name from any of (i) a user-configured hub or other device to which the field device is coupled, (ii) a letterbug installed in the field device, (iii) a digital data processing apparatus, (iv) a software generated letterbug.

48. The field device of claim 46, the further improvement wherein the field device registers a characteristic via the IP network.

49. The field device of claim 48, the further improvement wherein the field device registers the characteristic with a bulletin board on the IP network.

50. The field device of claim 49, the further improvement wherein the field device registers the characteristic with in a Javaspace on the IP network.

51. The field device of claim 46, the further improvement wherein the field device communicates with another element of the system over the IP network in order to obtain configuration information.

52. The field device of claim 46, the further improvement wherein the field device retains configuration for use at startup.

53. The field device of any of claims 46 - 52, the further improvement wherein the field device has a processor that performs any of (i) a control algorithm and (ii) signal conditioning.

54. The field device of claim 53, the further improvement wherein the processor configures the field device as a controller.

55. The field device of claim 54, the further improvement wherein the processor configures the field device to perform proportional integral derivative control.

56. The field device of any of claims 46 - 52, the further improvement wherein the field device includes a web server that facilitates any of configuration, monitoring and maintenance of at least the field device.

57. The field device of claim 56, the further improvement wherein the field device comprises a configuration editor.

58. The field device of claim 57, the further improvement wherein the configuration editor is selectively disabled or enabled, depending upon the type of network to which the field device is coupled.

59. The field device of any of claims 46 - 52, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

60. The field device of claim 59, the further improvement wherein the field device is adapted for use in a process control system.

61. A control device for a control system, the improvement wherein

the control device provides a virtual machine environment and executes byte code therein,

the byte code configuring the control device to execute a control algorithm.

62. The control device of claim 61, the further improvement wherein the byte code configures the control device to execute a control function block.

63. The control device of claim 61, the further improvement wherein the byte code configures the control device as a controller.

64. The control device of claim 63, the further improvement wherein the byte code configures the control device to perform proportional integral derivative control.

65. The control device of any of claims 61 - 64, the further improvement wherein the control device comprises any of web server, control station, operator console, personal computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

66. The control device of any of claims 61 - 64, the further improvement wherein the byte code comprises JAVA byte code.

67. A control device for a control system, the improvement wherein t he control device provides a web server and a virtual machine environment.

68. The control device of claim 67, the further improvement wherein the virtual machine environment executes byte code that configures the control device to execute a control algorithm.

69. The control device of claim 68, the further improvement wherein the byte code configures the control device as a controller.

70. The control device of claim 69, the further improvement wherein the byte code configures the control device to perform proportional integral derivative control.

71. The control device of claim 67, the further improvement wherein any of the web server and the virtual machine environment is embedded.

72. The control device of claim 67, the further improvement wherein t he web server any of (i) facilitates any of configuration, monitoring and maintenance of the control system or one or more control devices, (ii) collects process data from one or more control devices, (iii) generates source for operator displays, (iv) provides access to the control system, and (v) hosts an applications development environment.

73. The control device of any of claims 67 - 72, the further improvement wherein the control device comprises any of a web server, control station, operator console, personal computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

74. The control device of any of claims 67 - 72, the further improvement wherein the byte code comprises JAVA byte code.

75. A control device for a control system, the improvement wherein the control device comprises

a low-power processor,

an interface to an IP network, the interface being in communication with the processor, and

the interface receives operational power for the control device from the IP network.

76. The control device of claim 75, the further improvement wherein the interface comprises an interface to an Ethernet network.

77. The control device of claim 75, the further improvement whe rein the processor provides a virtual machine environment and executes a web server.

78. The control device of claim 77, the further improvement wherein the control device comprises at least one of a random access memory, a read-only memory, FlashRAM, and a sensor interface, access to permanent storage, a configurator, system management software, messaging services, alarm/event notification, byte code implementing process control functions, byte code implementing status reporting.

79. The control device of any of claims 75 - 78, the further improvement wherein the control device comprises any of a web server, control station, operator console, personal computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

80. A control device for process control, the improvement wherein

the device comprises an interface to an IP network, and

on startup, the device registers a characteristic thereof with at least one other device on the IP network.

81. The control device of claim 80, the further improvement wherein the control device issues to the IP network, via the interface, a request for assignment of an IP address.

82. The control device of claim 80, the further improvement wherei n the control device receives a device identification name from any of (i) a user-configured hub or other device to which the control device is coupled, (ii) a letterbug installed in the control device, (iii) a digital data processing apparatus, (iv) a software generated letterbug.

83. The control device of claim 80, the further improvement wherein the control device registers the characteristic with a bulletin board on the IP network.

84. The control device of claim 83, the further improvement wherein th e control device registers the characteristic with in a Javaspace on the IP network.

85. The control device of claim 80, the further improvement wherein the control device communicates with another device over the IP network in order to obtain configuration information.

86. The control device of claim 80, the further improvement wherein the control device retains configuration information for use at startup.

87. The control device of any of claims 81 - 86, the further improvement wherein the control device has a processor that executes code that performs a control algorithm.

88. The control device of claim 87, wherein the processor executes code that configures the control device as a controller.

89. The control device of claim 88, the further improveme nt wherein the processor executes code to perform proportional integral derivative control.

90. The control device of any of claims 81 - 86, the further improvement wherein the control device includes a web server that any of (i) facilitates any of configuration, monitoring and maintenance of the control system or one or more control devices, (ii) collects process data from one or more control devices, (iii) generates source for operator displays, (iv) provides access to the control system, and (v) hosts an applications development environment.

91. The control device of claim 90, the further improvement wherein the control device comprises a configuration editor.

92. The control device of any of claims 81 - 86, the further improvement wherein the control device comprises any of a web server, control station, operator console, personal computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

93. The control device of claim 92, the further improvement wherein the control device is adapted for use in a process control system.

94. A control system comprising one or more field devices or control devices according to any of claims 1 - 5, 8 - 20, 23 - 32, 34 - 43, 46 - 53, 61 - 64, 67 - 72, 75 - 78, 80 - 86, and 88 coupled via one or more IP networks.

95. A control system according to claim 94, wherein the IP network is powered.

96. A process control system having one or more field devices according to any of claims 8 - 12.

97. A control system comprising

a plurality of control devices coupled for communication via an IP network,

a DHCP server that furnishes IP addresses in response to requests by one or more of the control devices.

98. The control system of claim 97, wherein one or more of the control devices are field devices.

99. The control system of claim 98, adapted for process control, wherein the control devices are process control devices.

100. The control system of any of claims 97 - 99, wherein the control devices comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

101. The control system of any of claims 97 - 99, wherein the DHCP server is solid state.

102. The process control system of claim 101, wherein the DHCP se rver is free of moving parts and comprises zero, one or more removable components.

103. The control system of any of claims 97 - 99, wherein the IP network is powered and wherein one or more of the control devices receive operational power from the IP network.

104. A DHCP server that is solid state and that is adapted for use on an IP network comprising one or more control devices.

105. The solid state DHCP server of claim 104, adapted for use with one or more control devices that are process control devices.

106. The solid state DHCP server of claim 104, adapted for use with one or more control devices that are field devices.

107. The solid state DHCP server of claim 106, adapted for use with field devices that include any of a transmitter or other sensor device, and a positioner or other actuator device.

108. A control system comprising

a plurality of control devices coupled for communication via an IP network,

a network enabler that is coupled to the IP network that responds to requests by the control devices to at least one of

i) register names specified by the control devices,

ii) search for names specified by the control devices,

iii) posting to a network bulletin board events specified by the control devices,

v) removing from the network bulletin board events specified by the control devices,

vi) querying the network bulletin board for events specified by the control devices,

vii) notifying the control devices of events specified by the control devices.

109. The control system of claim 108, wherein the network enabler is any of a JINI and a JavaSpace server.

110. The control system of claim 108, wherein one or more of the control devices are field devices.

111. The control system of claim 110, adapted for process control, wher ein the control devices are process control devices.

112. The control system of any of claims 108 - 111, wherein the control devices comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

113. The control system of any of claims 108 - 111, wherein the network enabler is solid state.

114. The process control system of claim 113, wherein the network enabler is free of moving parts and comprises zero, one or more removable components.

115. The control system of any of claims 108 - 111, wherein the IP network is powered and wherein one or more of the control devices receive operational power from the IP network.

116. A network enabler comprising

at least one IP network interface, and

one or more server functionalities, each of which responds to requests received over the network interface to at least one of

i) register a name specified in a request,

ii) search for a name specified in a request,

iii) post to a network bulletin board an event specified in a request,

v) remove from the network bulletin board an event specified in a request,

vi) query the network bulletin board for an event specified in a request,

vii) notify a requestor of events specified thereby,

viii)serve as a web server.

117. The network enabler of claim 116, wherein the server functionality is any of a JINI and a JavaSpace server.

118. The network enabler of any of claims 116 - 117, wherein the network enabler is solid state.

119. The network enabler of claim 118, wherein the network enabler is free of moving parts and comprises zero, one or more removable components.

120. The network enabler of claim 118, wherein the network enabler receives operational power from the IP network.

121. A method of operating a field device for a control system, the improvement comprising the steps of

providing within the field device a virtual machine environment,

executing byte code embodying a control algorithm within the virtual machine environment.

122. The method of claim 121, the further improvement comprising executing a control function block with the byte code.

123. The method of claim 121, the further improvement comprising configuring the field device as a controller.

124. The method of claim 123, the further improvement compri sing configuring the field device with the byte code to perform proportional integral derivative control.

125. A method of operating a field device for a control system, the improvement comprising the steps of the steps of

providing a virtual machine environment within the field device ,

executing byte code within the virtual machine environment to configure the field device to perform signal conditioning.

126. The method of any of claims 121 - 125, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

127. The method of any of claims 121 - 125, the further improvement wherein the byte code comprises JAVA byte code.

128. A method of operating a field device for process control, the improvement comprising executing a web server within the field device.

129. The method of claim 128, the further improvement wherein the web server is embedded.

130. The method of claim 128, the further improvement comprising serv ing with the web server web pages that facilitate any of configuration, monitoring and maintenance of at least the field device.

131. The method of claim 130, the further improvement comprising controlling configuration of at least the field device with a configuration editor that utilizes the web server as an interface.

132. The method of claim 131, the further improvement comprising selectively disabling or enabling the configuration editor, depending upon the type of network to which the field device is coupled.

133. A method of operating a field device for a control system, the improvement comprising the steps of executing a web server and a virtual machine environment within the field device.

134. The method of claim 133, the further improvement com prising executing byte code within the virtual machine environment that configures the field device to any of (i) execute a control algorithm and (ii) perform signal conditioning.

135. The method of claim 134, the further improvement comprising configurin g the field device as a controller.

136. The method of claim 135, the further improvement comprising configuring the field device with the byte code to perform proportional integral derivative control.

137. The method of claim 134, the further improvemen t wherein the web server is embedded.

138. The method of claim 134, the further improvement comprising facilitating any of configuration, monitoring and maintenance of at least the field device with the web server.

139. The method of claim 138, the furth er improvement comprising controlling at least the field devices' configuration with a configuration editor that utilizes the web server as an interface.

140. The method of claim 139, the further improvement comprising selectively disabling or enabling the configuration editor, depending upon the type of network to which the field device is coupled.

141. The method of any of claims 133 - 140, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

142. The method of any of claims 133 - 140, the further improvement wherein the byte code comprises JAVA byte code.

143. A method of operating a field device for a control system, the improvement comprising the steps of interfacing the field device with other elements of the control system via IP network.

144. The method of claim 143, the further improvement comprising receiving operational power for the field device from the IP network.

145. The method of claim 143, the further improvement comprising interfacing the field device with other elements of the control system via an Ethernet network.

146. The method of claim 145, the further improvement comprising receiving operational power for the field device from the Ethernet network.

147. The method of claim 143, the further improvement comprising providing a processor in the field device that is in communication with the IP network.

148. The method of claim 147, the further improvement wherein the processor is a low-po wer processor.

149. The method of claim 147, the further improvement comprising executing a virtual machine environment and a web server with the processor.

150. The method of claim 149, the further improvement comprising executing an operating system with the processor..

151. The method of claim 150, the further improvement comprising executing a real-time operating system with the processor.

152. The method of claim 150, the further improvement wherein the field device comprises at least one of a random access memory, a read-only memory, FlashRAM, and a sensor interface.

153. The method of any of claims 143 - 152, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

154. A method of operating a field device for process control, the improvement comprising the steps of

interfacing the field device with other elements of the control system via an IP network,

operating a processor in the field device that is in communication with the IP network.

155. The method of claim 154, the further improvement comprising receiving operational power for the field device from the IP network.

156. The method of claim 154, the further improvement comprising interfacing the field device with other elements of the control system via an Ethernet network.

157. The method of claim 156, the further improvement comprising receiving operational power for the field device from the Ethernet network.

158. The method of claim 154, the further improvement comprising executing a web server with the processor.

159. The method of claim 154, the further improvement comprising operating the processor to execute any of (i) a control algorithm and (ii) a signal conditioning algorithm.

160. The method of claim 159, the further improvement comprising performing proportional integral derivative control with the processor.

161. The method of claim 154, the further improvement comprising executing with the processor a web server that facilitates any of configuration, monitoring and maintenance of at least the field device.

162. The method of claim 161, the further improvement comprising controlling configuration of at least the field device with a configuration editor that utilizes the web server as an interface.

163. The method of claim 162, the further improvement comprising selectively disabling or enabling the configuration editor, depending upon the type of network to which the field device is coupled.

164. The method of any of claims 154 - 163, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

165. The method of claim 164, the further improvement comprising utilizing the field processor for process control.

166. A method of operating a field device for a control system, the improvement comprising the steps of

interfacing the field device with other elements of the control system via an IP network,

issuing a request from the field device to the IP network for an IP address.

167. The method of claim 166, the further improvement comprising receiving a device identification name from any of (i) a user-configured hub or other device to which the field device is coupled, (ii) a letterbug installed in the field device, (iii) a digital data processing apparatus, (iv) a software generated letterbug.

168. The method of claim 166, the further improvement comprising registering a characteristic of the field device via the IP network.

169. The method of claim 168, the further improvement comprising registering the characteristic with a bulletin board on the IP network.

170. The method of claim 169, the further improvement comprising registering the characteristic with in a Javaspace on the IP network.

171. The method of claim 166, the further improvement comprising communicating between the field and another element of the system over the IP network in order to obtain configuration for the field device.

172. The method of claim 166, the further improv ement comprising retaining configuration information within the field device for use at startup.

173. The method of any of claims 166 - 172, the further improvement comprising performing with a processor in the field device any of (i) a control algorithm and (ii) signal conditioning.

174. The method of claim 173, the further improvement comprising configuring the field device as a controller.

175. The method of claim 174, the further improvement comprising configuring the field device to perform proportional integral derivative control.

176. The method of any of claims 166 - 172, the further improvement comprising executing a web server within the field device, the web server facilitating any of configuration, monitoring and maintenance of at least the field device.

177. The method of claim 176, the further improvement comprising executing a configuration editor within the field device and providing an interface to the configuration editor via the web server.

178. The method of claim 177, the further im provement comprising selectively disabling or enabling the configuration editor, depending upon the type of network to which the field device is coupled.

179. The method of any of claims 166 - 172, the further improvement wherein the field device comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

180. The method of claim 179, the further improvement comprising utilizing the field processor for process control.

181. A method of operating a control device for a control system, the improvement comprising the steps of

executing byte code within a virtual machine environment provided in the control device,

the byte code configuring the control device to execute a control algorithm.

182. The method of claim 181, the further improvement comprising using the byte code to configure the control device to execute a control function block.

183. The method of claim 181, the further improvement comprising using the byte code to configure the control device as a controller.

184. The method of claim 183, the further improvement comprising using the byte code to configure the control device to perform proportional integral derivative control.

185. The control device of any of claims 181 - 184, the further improvement wh erein the control device comprises any of web server, control station, operator console, personal computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

186. The control device of any of claims 181 - 184, the further improvement wherein the byte code comprises JAVA byte code.

187. A method of operating a control device for a control system, the improvement comprising executing a web server and a virtual machine environment within the control device.

188. The method of claim 187, the further improvement comprising using the byte code to configure the control device to execute a control algorithm.

189. The method of claim 188, the further improvement comprising using the by te code to configure the control device as a controller.

190. The method of claim 189, the further improvement comprising using the byte code to configure the control device to perform proportional integral derivative control.

191. The method of claim 187, the further improvement wherein any of the web server and the virtual machine environment is embedded.

192. The method of claim 187, the further improvement comprising using the web server to any of (i) facilitate any of configuration, monitoring and maintenance of the control system or one or more control devices, (ii) collect process data from one or more control devices, (iii) generate source for operator displays, (iv) provide access to the control system, and (v) host an applications development environment.

193. The control device of any of claims 187 - 192, the further improvement wherein the control device comprises any of a web server, control station, operator console, personal

computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

194. The control device of any of claims 187 - 192, the further improvement wherein the byte code comprises JAVA byte code.

195. A method of operating a control device for a control system, the improvement comprising the steps of

operating a low-power processor within the control device,

communicating between the control device and other elements of the control system via an IP network,

drawing operational power for the control device from the IP network.

196. The method of claim 195, the further improvement comprising interfacing the field device with other elements of the control system via an Ethernet network.

197. The method of claim 195, the further improvement comprising executing a virtual machine environment and a web server with the processor.

198. The method of claim 197, the further improvement wherein the control device comprises at least one of a random access memory, a read-only memory, FlashRAM, and a sensor interface, access to permanent storage, a configurator, system management software, messaging services, alarm/event notification, byte code implementing process control functions, byte code implementing status reporting.

199. The control device of any of claims 195 - 198, the further improvement wherein the control device comprises any of a web server, control station, operator console, personal

computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

200. A method of operating a control device for process control, the improvement comprising the steps of

communicating between the control device and other elements of the control system via an IP network, and

causing the control device, on startup, to register a characteristic thereof with at least one other device over the IP network.

201. The method of claim 200, the further improvement comprising issuing with the control device, via the IP network, a request for assignment of an IP address.

202. The method of claim 200, the further improvement comprising receiving for the control device a device identification name from any of (i) a user-configured hub or other device to which the control device is coupled, (ii) a letterbug installed in the control device, (iii) a digital data processing apparatus, (iv) a software generated letterbug.

203. The method of claim 200, the further improvement comprising registering a characteristic of the control device with a bulletin board on the IP network.

204. The method of claim 203, the further improvement comprising registering the characteristic with in a Javaspace on the IP network.

205. The method of claim 200, the further improvement comprising communicating between the control device and another device over the IP network in order to obtain configuration information for the control device.

206. The method of claim 200, the further improvement comprising retaining configuration information within the control device for use at startup.

207. The control device of any of claims 201 - 206, the further improvement comprising executing code embodying a control algorithm on a processor within the control device.

208. The method of claim 207, comprising using the code to configure the cont rol device as a controller.

209. The method of claim 208, the further improvement wherein the processor executes code to perform proportional integral derivative control.

210. The control device of any of claims 201 - 206, the further improvement compris ing executing a web server within the control device, the web server any of (i) facilitating any of configuration, monitoring and maintenance of the control system or one or more control devices, (ii) collecting process data from one or more control devices, (iii) generating source for operator displays, (iv) provides access to the control system, and (v) hosting an applications development environment.

211. The method of claim 210, the further improvement comprising executing a configuration editor within the control device, the configuration editor utilizing the web server as an interface.

212. The control device of any of claims 201 - 206, the further improvement wherein the control device comprises any of a web server, control station, operator console, personal computer, handheld computer, workstation, integrator, controller, transmitter or other sensor device, positioner or other actuator device.

213. The method of claim 212, the further improvement comprising utilizing the control device for process control.

214. A method of operating control system comprising the steps of

communicating among a plurality of control devices via an IP network,

generating, within at least a selected one of the control devices, a request for an IP address,

furnishing IP addresses to a requesting control device with a DHCP server in response to such a request.

215. The method of operating a control system of claim 214, wherein one or more of the control devices are field devices.

216. The method of operating a control system of claim 215, including the step of utilizing the control devices for process control.

217. The method of operating a control system of any of claims 214 - 216, wherein the control devices comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

218. The method of operating a control system of any of claims 214 - 216, comprising the step of providing a DHCP server that is solid state.

219. The process control system of claim 218, comprising providing a DHCP server that is free of moving parts and that comprises zero, one or more removable components.

220. The method of operating a control system of any of claims 214 - 216, comprising the step of drawing operational power for the control devices from the IP network.

221. A method of operating a control system comprising the steps of

communicating among a plurality of control devices coupled via an IP network,

responding to requests issued by the control devices over the IP network with a network enabler that at least one of

i) registers names specified by the control devices,

ii) searches for names specified by the control devices,

iii) posts to a network bulletin board events specified by the control devices,

v) removes from the network bulletin board events specified by the control devices,

vi) queries the network bulletin board for events specified by the control devices,

vii) notifies the control devices of events specified by the control devices.

222. The method of operating a control system of claim 221, wherein the network enabler is any of a JINI and a JavaSpace server.

223. The method of operating a control system of claim 221, wherein one or more of the control devices are field devices.

224. The method of operating a control system of claim 223, for process control.

225. The method of operating a control system of any of claims 221 - 224, wherein the control devices comprises any of a transmitter or other sensor device, and a positioner or other actuator device.

226. The method of operating a control system of any of claims 221 - 225, comprising the step of providing a network enabler that is solid state.

227. The process control system of claim 226, comprising providing a network enabler that is free of moving parts and comprises zero, one or more removable components.

228. The method of operating a control system of any of claims 221 - 224, comprising the step of drawing operational power for the control devices from the IP network.